wherein each of the transducers has a triple-mode resonant frequency characteristic, and

wherein a first filter including one of the transducers connected in parallel has resonant frequencies of F11, Fc1 and Fu1 and a second filter including another transducer has resonant frequencies of F12, Fc2 and Fu2, and insertion losses of at least four of the resonant frequencies are substantially equal to each other.

REMARKS

Claims 1-7 are pending in the present application. Claims 1 and 3-6 have been amended by the present amendment.

In the outstanding Office Action, Claims 1, 2, and 7 were rejected under 35 U.S.C. § 102(b) as anticipated by Dai et al. (U.S. Patent No. 5,896,071, herein "Dai"), and Claims 3-6 were indicated as allowable if rewritten in independent form.

Applicants thank the Examiner for the indication of allowable subject matter. In view of this indication, Claims 3-6 have been rewritten in independent form including all the features of their base claim and any intervening claims, and with a minor additional amendment in Claim 5 and to recite the term "substantially" rather than the original term "almost." Accordingly, Claims 3-6 are believed to be allowable.

Claims 1, 2, and 7 were rejected under 35 U.S.C. § 102(b) as anticipated by Dai. That rejection is respectfully traversed.

Amended Claim 1 is directed to a surface acoustic device having a plurality of transducers, each having a plurality of regions whose propagation directions of surface waves are opposite to each other. Further, at least two of the transducers are connected in parallel to each other and resonant modes of the transducers are coupled. Therefore, a steep

characteristic (out-of-band should characteristic) with a low loss and within a broad band is achieved.

The specification discloses three respective resonant peaks obtained by surface acoustic wave filters A and B each having a RSPUDT electrode structure are arranged in order, to couple the total six resonant peaks to realize a filter of a broad band.

The device of Claim 1 advantageously provides a surface acoustic wave device with a low loss, a broad band, and a steep skirt characteristic.[2]

Dai discloses a surface acoustic wave device having a structure with two transducers (resonator filters 72 and 74 in FIG. 9), each having a plurality of regions (first and second RESPUDTs R1 and R2 or R1M and R2s in FIG. 9) whose propagation directions of surface waves are opposite to each other. Further, the two transducers are connected in parallel to each other. However, Dai does not teach or suggest a structure having a plurality of transducers each having a plurality of regions whose propagation directions of surface waves are opposite to each other, at least two of the transducers are connected in parallel to each other, and the resonant modes of the transducers are coupled, as in amended Claim 1.

Accordingly, it is respectfully submitted that Claim 1 and each of the claims depending therefrom define over Dai.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

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[2]Specification, page 1, line 17, to page 4, line 1, and page 5, line 18, to page 6, line 19.

Finally, the attention of the Patent Office is directed to the change of address of Applicant's representative, effective January 6, 2003:

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IN THE CLAIMS

Please amend the claims as follows:

--1. (Twice Amended) A surface acoustic wave device comprising:

a plurality of [surface acoustic wave filters each including two or more] transducers formed on a piezoelectric substrate [and] including a [pair] plurality of regions, each of the regions having a pair of comb electrodes whose surface wave propagation directions are opposite to each other,

wherein at least two of the transducers [of the surface acoustic wave filters] are connected in parallel to each other and resonant modes of the transducers are coupled.

3. (Twice Amended) [The] A surface acoustic wave device [according to claim 2,] comprising:

a plurality of transducers formed on a piezoelectric substrate including a plurality of regions, each of the regions having a pair of comb electrodes whose surface wave propagation directions are opposite to each other,

wherein at least two of the transducers are connected in parallel to each other and resonant modes of the transducers are coupled,

wherein each of the transducers has a triple-mode resonant frequency characteristic, and

wherein a first filter including one of the transducers connected in parallel has resonant frequencies of F11, Fc1 and Fu1 and a second filter including another transducer has

resonant frequencies of F12, Fc2 and Fu2, and the resonant frequencies are expressed as follows:

$F11 < F12 < Fc2 < Fc1 < Fu1 < Fu2$.

4. (Twice Amended) [The] A surface acoustic wave device [according to claim 2,] comprising:

a plurality of transducers formed on a piezoelectric substrate including a plurality of regions, each of the regions having a pair of comb electrodes whose surface wave propagation directions are opposite to each other,

wherein at least two of the transducers are connected in parallel to each other and resonant modes of the transducers are coupled,

wherein each of the transducers has a triple-mode resonant frequency characteristic, and

wherein a first filter including one of the transducers connected in parallel has resonant frequencies of F11, Fc1 and Fu1 and a second filter including another transducer has resonant frequencies of F12, Fc2, and Fu2, a phase of the resonant frequency F11 is opposite to that of the resonant frequency F12, a phase of the resonant frequency Fc1 is opposite to that of the resonant frequency Fc2, and a phase of the resonant frequency Fu1 is opposite to that of the resonant frequency Fu2.

5. (Twice Amended) [The] A surface acoustic wave device [according to claim 2,] comprising:

a plurality of transducers formed on a piezoelectric substrate including a plurality of regions, each of the regions having a pair of comb electrodes whose surface wave propagation directions are opposite to each other,

wherein at least two of the transducers are connected in parallel to each other and resonant modes of the transducers are coupled,

wherein each of the transducers has a triple-mode resonant frequency characteristic, and

wherein a first filter including one of the transducers connected in parallel has resonant frequencies of F11, Fc1 and Fu1 and a second filter including another transducer has resonant frequencies of F12, Fc2 and Fu2, and respective intervals of at least four resonant frequencies are [almost] substantially equal to each other.

6. (Twice Amended) [The] A surface acoustic wave device [according to claim 2,] comprising:

a plurality of transducers formed on a piezoelectric substrate including a plurality of regions, each of the regions having a pair of comb electrodes whose surface wave propagation directions are opposite to each other,

wherein at least two of the transducers are connected in parallel to each other and resonant modes of the transducers are coupled,

wherein each of the transducers has a triple-mode resonant frequency characteristic, and

wherein a first filter including one of the transducers connected in parallel has resonant frequencies of F11, Fc1 and Fu1 and a second filter including another transducer has resonant frequencies of F12, Fc2 and Fu2, and insertion losses of at least four of the resonant frequencies are [almost] substantially equal to each other.--